

REMARKS

Claims 1, 3-10, 12-20, and 23-29 are all the claims pending in the application that have been examined on their merits. Claims 11 and 21-22 were non-elected without traverse and were withdrawn. By entry of the Amendment, Applicant cancels claims 15-19. Entry of this Amendment is appropriate as it simplifies the issues for appeal.

Preliminary Matters

Applicant thanks the Examiner for withdrawing objections to the Drawings. Applicant further respectfully asks the Examiner to indicate acceptance of the drawings in the next Office communication.

Summary of the Office Action

The Examiner maintained 35 U.S.C. § 112, first paragraph, rejection of claim 10. The Examiner withdrew the previous prior art rejections. The Examiner, however, found new grounds for rejecting the claims. Claims 1, 3-10, 12-20, and 23-29 are rejected under 35 U.S.C. § 103(a).

Claim Rejection - 35 U.S.C. § 112

Claim 10 stands rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the enablement requirement. Specifically, the Examiner contends that the specification does not teach how a program stored in a readable medium, when executed by a computer, can split an optical signal into parts (Office Action, page 2). Applicant respectfully disagrees.

Applicant respectfully submits that claim 10 is directed to a computer readable medium storing *instructions* for *performing a method* of recovering an optical signal with a digital signal

processing receiver. In other words, in an exemplary, non-limiting embodiment, a medium that is readable by a computer stores instructions for performing the method. That is, Applicant respectfully notes that claim 10 does not recite *a computer* splitting an optical signal but instead features *instructions* for splitting the signal. One of skill in the art would readily understand how to make and use the invention when viewing claim 10 in light of the specification, for example, Fig. 1. Applicant's position is supported by the Office Action, as "the splitting of the signal, as taught by the instant specification, is done by a splitting unit instead of a computer program" (Office Action, page 2). It is clear that there must be instructions instructing the splitting unit to split the signal and these instructions are stored on a computer-readable medium and are recited in claim 10. Accordingly, it is appropriate and necessary that this rejection is withdrawn.

Claim Rejections - 35 U.S.C. § 103: Kawarai + Jung + Van den Bergh + Wan

Claims 1, 3, 6, 12, 14, 23, and 25-27 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over US Patent No. 6,707,963 to Kawarai (hereinafter "Kawarai") in view of US Patent 7,068,949 to Jung et al. (hereinafter "Jung"), European Patent Application No. EP 0,996,243 to Van den Bergh et al. (hereinafter "Van den Bergh"), and US Patent 7,158,723 to Wan et al. (hereinafter "Wan").

Applicant hereby traverses. For example, the Office Action fails to make a *prima facie* case of obviousness as the references fail to disclose all the features of the claims. Of these rejected claims, only claims 1 and 6 are independent. Claim 1 recites *inter alia*: "a splitting unit splitting the optical signal received by the receiver input into a number of parts such that said number corresponds to a number of diodes in the receiver;... wherein the split parts of the optical signal are fed into said at least two waveguide branches such that the entire optical signal is fed

into the at least two waveguide branches, wherein each waveguide branch comprises a different optical filtering element...”

That is, in an exemplary, non-limiting embodiment, it is disclosed that a signal is split into a number of parts and each of these parts are fed into one of the branches (*e.g.*, see Figs. 1-3). In other words, in an exemplary embodiment of the present invention, the signal is split into the number of branches available and each branch has a filtering element such that each split portion is processed with a different type of filter. It will be appreciated that the foregoing remarks relate to the invention in a general sense; the remarks are not necessarily limitative of any claims and are intended only to help the Examiner to better understand the distinguishing aspects of the claims mentioned further below.

The Examiner acknowledges that Kawai does not disclose or suggest having each part of the split signal being fed into a diode and a respective filter (*see* page 3 of the Office Action). The Examiner, however, alleges that Jung in Fig. 1 cures this deficiency. Applicant respectfully disagrees. Applicant respectfully submits that even assuming *arguendo* that Jung discloses splitting the signal into two branches as opposed to allegedly three branches as discloses in Kawai, Jung does not have a one to one correspondence between number of diodes and branches (Fig. 1).

In addition, the proposed combination is unworkable. That is, the Examiner proposes to simply disregard the part of the input light that is transmitted out of the transponders 20 and into the variable attenuation section 10 as described in Kawai (Fig. 1) alleging that the combination of Kawai and Jung is a predictable result. However, there is absolutely no reason to eliminate the part of the signal that is going through the wavelength locker 26 into the attenuation section

10. In fact, the Examiner has provided no reasons for such modification nor has the Examiner specified what is the predictable result.

It is further noted that, in fact, such modification would result in an unworkable combination. That is, there is no point of controlling the current fed into the Peltier element 28 (using results from the calculation unit in the wavelength locker) when no signal is fed into the variable attenuators. The whole purpose of the Kawarai reference is to attenuate the signals using an improved attenuator. If the signal is not attenuated (no portion of the signal is provided to the attenuation section 10), the calculations of the wavelength locker 26 become pointless.

In summary, Applicant respectfully submits that Kawarai taken alone or in any conceivable combination does not disclose or even remotely suggest a one to one correspondence between the number of parts of the signal and the number of diodes on the branches. Van den Bergh and Wan do not cure these deficiencies. Accordingly, the prior art of record fails to disclose or even remotely suggest that the splitting unit splits the optical parts into a number of parts equal to the number of diodes.

In addition, claim 1 further features each waveguide branch executing *different types of filter process*. The Office Action fails to address this feature or provide where in the references this feature is disclosed, and therefore applicant respectfully requests that the rejection be withdrawn.

Similarly, Applicant respectfully notes that claim 23 features *different types of filtering*, and the Office Action offers Kawarai Fig. 6 and different transmission intervals of a spectral filter as allegedly disclosing this feature (page 4). Applicant also respectfully notes that dependent claim 12 contains the feature of two *different types of filter elements*, and the Office Action offers filters 36 and 38 of Kawarai as allegedly disclosing this feature (page 4).

Applicant respectfully submits that two spectral filters (Office Action, page 4) with different frequency responses (Kawarai col. 4, lines 20-24) are neither of a different *type* of filter nor performing a different *type of filtering or filter process*, as featured in the respective claims. In other words, although these two filters 36 and 38 of Kawarai may filter a different frequency, they are spectral type filters. That is, in Kawarai, filters 36 and 38 are same type of filter and not two different filters.

As all the features of claim 1 were not disclosed in the references and claim 6 contains similar features, even assuming the rejection of claims 12 and 23 implicitly attempted to address these features, Applicant respectfully asks that the rejection of independent claims 1 and 6 and their respective dependent claims be withdrawn.

Claim Rejections - 35 U.S.C. § 103: Bülow + Van den Bergh + Wan

Claims 1, 3, 5-8, 12, 23-24, and 26-27 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over US Patent No. 5,793,511 to Bülow (hereinafter “511 patent”) in view of Van den Bergh and Wan. Applicant respectfully traverses these grounds of rejection at least in view of the following exemplary comments.

Applicant first notes that claim 23 is not listed as rejected in the paragraph marked 5 on page 4 of the Office Action, but it is addressed as if it were rejected on line 6 of page 5. Applicant’s reply assumes claim 23 was inadvertently omitted from the list in paragraph 5 of page 4 and currently stands rejected. Applicant also notes that since claims 15-17 and 19 have been cancelled, this rejection is rendered moot with respect to these claims.

Applicant hereby traverses the rejection. For example, the Office Action fails to make a *prima facie* case of obviousness as the references fail to disclose all the features of the claims. Similar to the argument above, claim 1 contains the feature of *each waveguide branch* executing

different *types of filter processes*. Applicant also notes that dependent claim 12 contains the feature of two *different types of filter elements* on different waveguide branches, and that the Office Action proffers Fig. 1 of the '511 patent as allegedly disclosing this feature (page 5). Analogously, claim 23 features different *types of filtering*, and the Office Action proffers Kawarai Fig. 6 and different transmission intervals of a spectral filter as allegedly disclosing this feature. Applicant respectfully submits that two polarizing filters (Office Action, page 5) with different orientations ('511 patent, col. 4, lines 35-38) are neither a different *type of filter* nor are performing a different *type of filter process or filtering*. As the features of claim 1 are not disclosed in the references and independent claim 6 contains similar features, even assuming the rejection of claims 12 and 23 implicitly attempted to address these features, Applicant respectfully asks that the rejection of independent claim 1 and the claims that depend from it and from independent claim 6 be withdrawn.

Claim Rejections - 35 U.S.C. § 103: Taylor + Prigent + Van den Bergh + Wan

Claims 1, 3, 5-7, 12-13, 20, 23-24, and 26-29 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over US Patent No. 7,106,979 to Taylor (hereinafter "Taylor") in view of US Patent No. 5,355,240 to Prigent et al. (hereinafter "Prigent"), Van den Bergh, and Wan.

Applicant first notes that claim 20 is not listed as rejected in the paragraph marked 6 on page 5, but it is addressed as if it were rejected in the following paragraph. Applicant's reply assumes claim 20 was inadvertently omitted from the list in paragraph 6 of page 5 and currently stands rejected. Applicant also notes that since claims 15-17 and 19 have been cancelled, this rejection is rendered moot with respect to these claims.

Applicant hereby traverses. For example, the Office Action fails to make a *prima facie* case of obviousness as the references fail to disclose all the features of the claims. For example with regard to claim 1, claim 1 features that the *entire* optical signal is fed into the at least two waveguide branches, optical filtering elements, and photo diodes. Applicant respectfully submits that the Office Action does not address this feature. Similar to Kawai, Taylor feeds only a *portion* of the input optical signal Fig. 3 as a portion of the signal 99 is supplied to the receivers (as acknowledged in the Office Action, page 5). Claim 6 contains features similar to claim 1, and as the features of claim 1 were not disclosed by the references, Applicant respectfully asks that the rejection of independent claims 1 and 6 and the claims respectfully dependent from them be withdrawn.

With regard the combination of references, Applicant respectfully submits that Taylor detects and monitors polarization and does not and *cannot* use different types of filters to detect polarized components (see, e.g., Field of the Invention; col. 3, lines 55-65; Fig. 5, block 270, col. 8, lines 14-17). The proffered combination *would not function* for the intended purpose of Taylor without all the filters being the same type and using the same filtering process: polarizing filters of various orientations. Prigent, Van den Bergh, and Wan do not cure these deficiencies. Applicant therefore respectfully asks that the rejections based on this combination be withdrawn.

Claim Rejection - 35 U.S.C. § 103: Bülow + Van den Bergh + Wan + Al-Araji

Claim 4 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the '511 patent, in view of Van den Bergh, Wan, and in further view of US Patent No. 6,559,756 to Al-Araji et al. (hereinafter "Al-Araji"). Applicant also notes that since claim 18 has been cancelled, this rejection is rendered moot with respect to this claim.

Applicant respectfully submits that Al-Araji fails to cure the deficiencies of the '511 patent, Van den Bergh, and Wan in failing to disclose all the features of independent claim 1, as discussed above with regard to the combination of the '511 patent, Van den Bergh, and Wan. Applicant therefore respectfully submits that claim 4 is patentable over the proffered combination of references.

Claim Rejection - 35 U.S.C. § 103: Bülow + Van den Bergh + Wan + Chouly

Claim 9 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the '511 patent, in view of Van den Bergh, Wan, and in further view of US Patent Application No. 2004/0017857 to Chouly et al. (hereinafter "Chouly").

Applicant respectfully submits that Chouly fails to cure the deficiencies of the '511 patent, Van den Bergh, and Wan in failing to disclose all the features of independent claim 6, as discussed above with regard to the combination of the '511 patent, Van den Bergh, and Wan. Applicant therefore respectfully submits that claim 9 is patentable over the proffered combination of references.

Claim Rejection - 35 U.S.C. § 103: Bülow + Van den Bergh + Wan + Lima

Claim 10 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the '511 patent, in view of Van den Bergh, Wan, and in further view of "Polarization Diversity and Equalization for PMD Mitigation in Optical Communication Systems", Lima et al., IEEE International Conference on Acoustics, Speech, and Signal Processing, May 13-17, 2002 (hereinafter "Lima").

Applicant respectfully notes that claim 10 is not limited to a simulation as discussed in the Office Action on page 9.

Applicant hereby traverses. For example, the Office Action fails to make a *prima facie* case of obviousness as the references fail to disclose all the features of the claim. Claim 10 contains features similar to those of claim 6, and claim 6 is shown above to be patentable over the combination of the '511 patent, Van den Bergh, and Wan. Applicant respectfully submits that Lima fails to cure the deficiencies of the '511 patent, Van den Bergh, and Wan in failing to disclose all the features of claim 10 for reasons analogous to those with respect to claim 6. Applicant therefore respectfully submits that claim 10 is patentable over the proffered combination of references.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned Attorney at the telephone number listed below.

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Respectfully submitted,



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23373

CUSTOMER NUMBER

Date: January 16, 2009